Feb. 6, 1934. G. K. S. FERGUSON 1,946,315

MEANS FOR PACKAGING FRUIT OR THE LIKE

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Fig. 1.

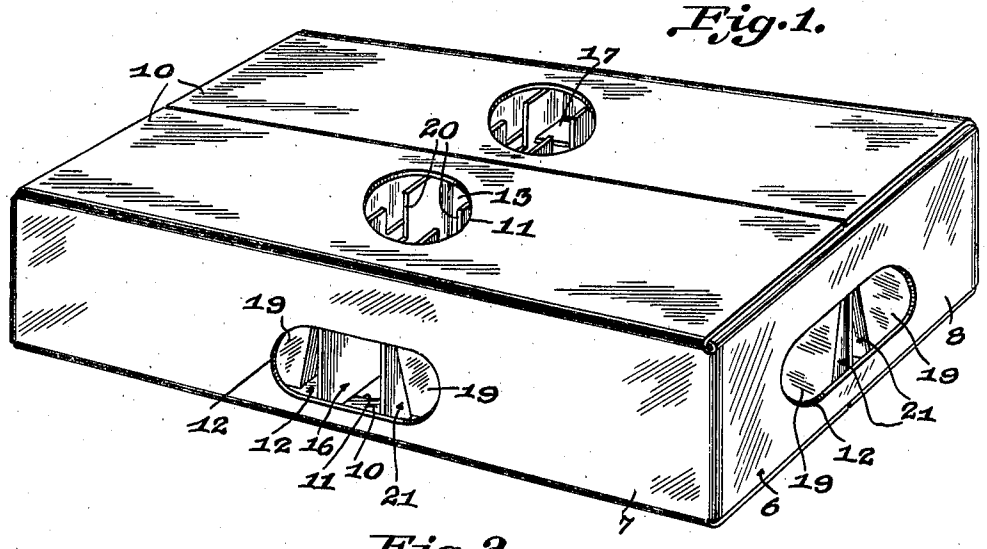
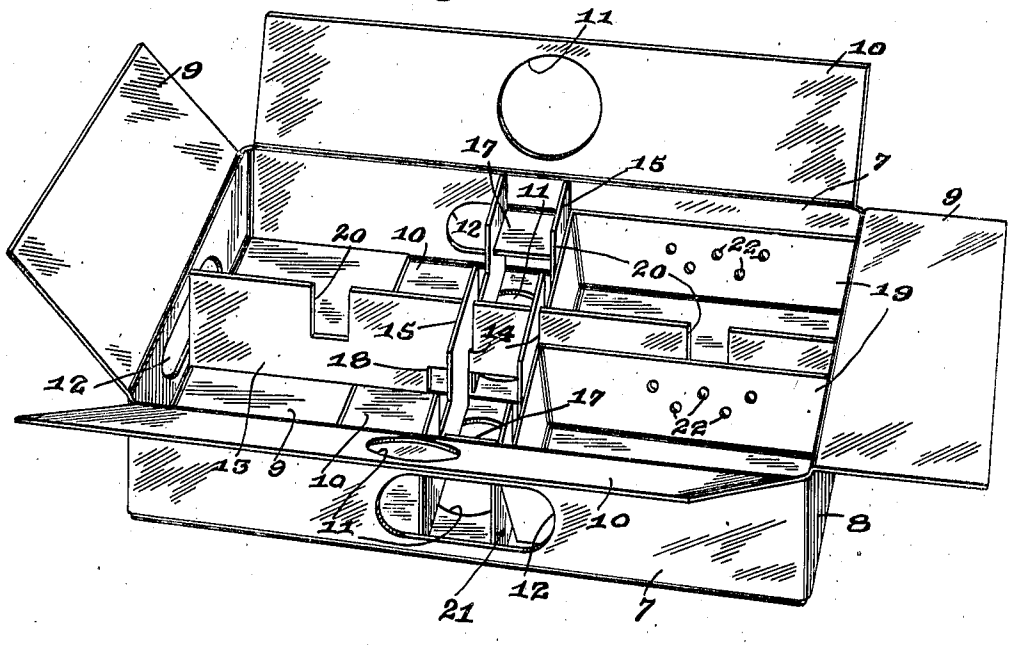


Fig. 2.



Inventor

G. K. S. Ferguson

By Seymour & Bright

Attorneys

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Fig. 3.

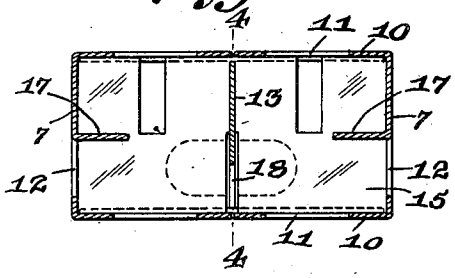


Fig. 4.

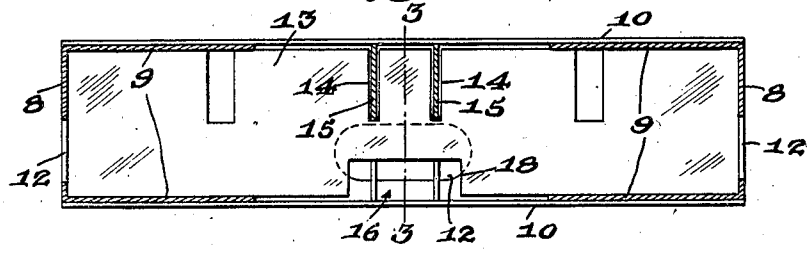
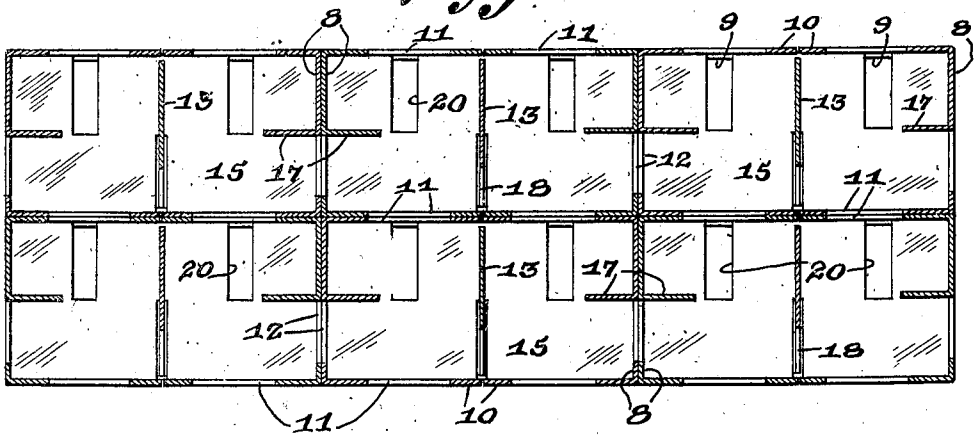


Fig. 5.



Inventor

G. K. S. Ferguson

By Seymour & Bright

Attorneys

Patented Feb. 6, 1934 1,946,315

UNITED STATES PATENT OFFICE

1,946,315

MEANS FOR PACKAGING FRUIT OR THE LIKE

George K. S. Ferguson, North East, Pa.

Application May 21, 1931. Serial No. 539,101

18 Claims. (Cl. 229—15)

This invention relates to improvements in the art of packaging fruit, berries, vegetables and the like.

Perishable merchandise such as fruit, berries and vegetables, in the past have generally been shipped in wooden crates of such construction that when the crates are packed side by side, they must be spaced one from the other so that air may enter between them and pass into the crates between the slats forming the sides of the same. In order to maintain such ventilating flues between the crates, it is necessary to nail strips or slats to the crates in order to hold one apart from the other. This not only adds to the cost of arranging the crates within freight cars or the like, but wood crates are relatively expensive, and no means are provided for effectively ventilating through the crates.

Some attempts have been made to use paper or straw board in the construction of primary or main containers which take the place of the crates, but with one exception, they are not constructed to insure adequate ventilation at all times during transit or when stored. The exception mentioned is disclosed in my U. S. Patent 1,732,264, dated October 22, 1929. That patent discloses improvements in the art of packaging fruit or the like, in which each primary carton is formed of manufactured fibrous sheet material, and each side wall, as well as the top and bottom of the carton are provided with relatively large ventilating openings. Secondary containers holding the fruit or the like, are packed within the primary container, and the construction is such that when the primary cartons containing the secondary containers are packed in closely abutting relation, either side by side or in superposed relation, adequate ventilation is insured through the mass of packed fruit or the like.

The primary purpose of the present invention is to improve the packaging means disclosed in said patent, and this is mainly brought about by providing the interior of each primary carton with one or more vertical partitions which not only prevents the walls and top and bottom of the carton from collapsing inwardly, but forms a flue within the primary carton to increase the ventilating properties of the construction. The improved packaging means is of simpler and less expensive construction than the wood crates; the package may be shipped in knock-down condition to the point where the fruit or the like is to be packed into the same, and of course, when the packages are placed in a freight car or the like, there is no necessity of nailing spacing strips to them as is absolutely essential with wood crates. As a matter of fact, manufactured fibrous sheet material such as corrugated board and the like, is not of sufficient consistency or body to hold nails, and will not hold up under stripping. Therefore, it is practically impossible commercially to space the crates of this material in order to allow circulation in a loaded car.

With the foregoing objects outlined and with other objects in view which will appear as the description proceeds, the invention consists in the novel features hereinafter described in detail, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the drawings,

Fig. 1 is a perspective view of a complete package made in accordance with the invention.

Fig. 2 is a similar view with the top flaps open and with two of the secondary containers removed in order to facilitate illustration.

Fig. 3 is a transverse sectional view of the package taken on the line 3—3 of Fig. 4, and with the secondary or inner containers removed.

Fig. 4 is a longitudinal sectional view of the same on the line 4—4 of Fig. 3.

Fig. 5 is a sectional view like Fig. 3, taken through a number of the packages after they have been placed in side by side and superposed relations.

Referring to the drawings, 6 designates one of the packages in its entirety. Such package is preferably formed of manufactured fibrous sheet material, and it comprises a primary or main carton consisting of side walls 7 and 8, and a top and bottom. The top and bottom is preferably formed of flaps 9 which fold inwardly from the side walls 8, and flaps 10 that fold inwardly from the walls 7. The oppositely disposed flaps 9 are relatively shorter in comparison with the length of the carton, and when they are folded inwardly, they are covered by the flaps 10, which flaps have at their central portions, relatively large ventilating openings 11.

Each side wall also has a relatively large centrally located ventilating opening 12 which also form hand holes to facilitate the handling of the package.

Due to the fact that the primary carton is of manufactured fibrous sheet material, it is relatively flexible, so I provide the interior with a reinforcement which not alone prevents collapsing, but provides a ventilating flue within the primary carton. In the example illustrated, a lon-

gitudinal vertical partition 13 rests on the bottom of the primary carton and abuts at its ends against the walls 8, and abuts at its upper edge against the flaps forming the top of the carton. This partition is notched as indicated at 14, to interfit with the notched portions of transverse vertical partitions 15, which are spaced apart to provide a ventilating flue 16 within the carton. The upper and lower ends of this flue communicate with the opening 11 in the top and bottom of the carton, and the horizontal ends of the flue communicate with the ventilating openings 12 in the walls 7. It will therefore be understood that air and other gases can travel up the flue or through the same transversely of the carton.

For the purpose of preventing the ends of the transverse partitions from moving toward one another, any suitable spacing means may be provided. For instance, tongues 17 may be cut from the walls 7 where the openings 12 are located in said walls, and these tongues may then be pushed inwardly to a horizontal position, as best shown in Fig. 3.

It will of course be understood that the ends of the transverse partitions preferably abut against the side walls 7, and that the top and bottom edges of these partitions abut respectively against the top and bottom of the carton.

As the longitudinal partition 13 intersects the ventilating flue, it is necessary in order not to segregate one side of the flue from the other, to provide an opening in the longitudinal partition. Such opening is shown at 18.

In the package illustrated, the partitions divide the interior of the primary carton into four compartments for the reception of secondary containers 19, and in order to insure ventilation from one compartment to the other, and the flue 16, the upper edges of the partitions are notched as shown at 20.

The secondary containers are preferably of the type having side walls which diverge upwardly, for the purpose of forming horizontal passageways 21 along the sides of the secondary containers, and these passageways may communicate with the interior of the secondary containers by means of small ventilating openings 22 in opposite side walls of the secondary containers.

The secondary containers are preferably of less height than the vertical partitions to insure adequate space for fruit or the like piled above the upper edges of the secondary containers, and to allow for the passage of air or gases through the ventilating notches 20.

From the foregoing it will be understood that air entering the primary carton through any of the openings 11 or 12 may circulate around and over the secondary containers 19 and from one compartment of the primary carton to all of the others. Consequently, when packages of this kind are placed alongside of one another in abutting relation or when they are piled one on the other, the ventilating openings 11 of one carton will register with the similar ventilating openings 11 of the primary cartons arranged above or below the same, and of course, the ventilating openings 12 of any carton will register with the similar openings of other cartons arranged alongside of any one carton. Obviously, this will insure circulation of air laterally through the mass of packages, as well as upwardly through the packages, and as manufactured fibrous sheet material is smooth, the walls and tops and bottoms of the cartons will snugly engage one another so that the draft must go through the cartons and cannot simply pass around the same as is the case with wooden crates. Furthermore, gases which arise from the perishable merchandise rapidly pass away, and are not confined to cause spoilage.

From the foregoing it is believed that the construction and advantages of my invention may be readily understood by those skilled in the art, and it is apparent that changes may be made in the details disclosed, without departing from the spirit of the invention, as expressed in the claims.

What I claim and desire to secure by Letters Patent is:

1. Means for packaging fruit or the like, comprising a primary carton formed of manufactured fibrous sheet material and having side walls and a flat top and bottom, vertical partition means arranged in the carton and extending from the bottom to the top and supporting the latter, said partition means including partitions spaced apart and arranged so as to form a ventilating flue within the carton, each of said side walls being provided with a ventilating opening of substantial area, and one of the spaced partitions being cut away to provide a ventilating opening.

2. Means for packaging fruit or the like, comprising a primary carton formed of manufactured fibrous sheet material and having side walls and a flat top and bottom, vertical partition means arranged in the carton and extending from the bottom to the top and supporting the latter, said partition means including partitions spaced apart and arranged so as to form a ventilating flue within the carton, each of said side walls being provided with a ventilating opening of substantial area, and one of the spaced partitions being cut away to provide a ventilating opening, the edges of the spaced partitions extending into close relation to opposite side walls of said carton.

3. Means for packaging fruit or the like, comprising a primary carton formed of manufactured fibrous sheet material and having side walls and a flat top and bottom, vertical partition means arranged in the carton and extending from the bottom to the top and supporting the latter, said partition means including partitions spaced apart and arranged so as to form a ventilating flue within the carton, each of said side walls being provided with a ventilating opening of substantial area, and the upper edge portion of one of the spaced partitions being notched to form a ventilating opening.

4. Means for packaging fruit and the like, comprising a primary carton formed of manufactured fibrous sheet material and having side walls, a flat top and a bottom, vertical partitions arranged in the carton and extending from the bottom to the top and supporting the latter, one of said partitions being arranged lengthwise and others crosswise of the carton and each partition being cut away to provide a ventilating opening, the crosswise partitions being spaced apart and so arranged as to form a ventilating flue communicating with one of said openings, and each side wall having a ventilating opening of substantial area.

5. Means for packaging fruit and the like, comprising a primary carton formed of manufactured fibrous sheet material and having side walls, a flat top and a bottom, vertical partitions arranged in the carton and dividing the interior of the carton into a plurality of compartments, one of said partitions being arranged lengthwise of the carton and others crosswise of the carton, the partitions extending from the bottom to the top

and supporting the latter, and each being cut away to provide a ventilating opening, the crosswise partitions being spaced apart and so arranged as to form a ventilating flue communicating with one of said openings, each side wall being provided with a ventilating opening of substantial area, and secondary containers occupying said compartments.

6. A package comprising a container having side wall members and top and bottom members, a vent flue in said carton extending from one of said members to another, certain of said members having ventilating openings of substantial area communicating with said flue, one of the flue walls being cut away to provide an opening for the circulation of air.

7. A package comprising a container having side wall members and top and bottom members, a vent flue in said carton extending from one of said members to another, certain of said members having ventilating openings of substantial area communicating with said flue, one of the flue walls being cut away to provide an opening for the circulation of air, at least one wall of said flue forming a vertical reinforcement for the top member of the carton.

8. A package comprising a container having side wall members and top and bottom members, a vent flue in said carton extending from one of said members to another, certain of said members having ventilating openings of substantial area communicating with said flue, one of the flue walls being cut away to provide an opening for the circulation of air, at least one wall of said flue forming a horizontal reinforcement for opposite side wall members of the carton.

9. A package comprising a container having side wall members and top and bottom members, a vent flue in said container extending from one of said members to another, the top and bottom members being provided with ventilating openings communicating with the flue, and one of the flue walls being cut away to provide an opening for the circulation of air.

10. A package comprising a container having side wall members and top and bottom members, a vent flue in said container extending from one side wall member to the opposite side wall member, the last mentioned members being provided with ventilating openings communicating with the flue, and one of the flue walls being cut away to provide an opening for the circulation of air.

11. A package comprising a container having side walls, a top and bottom, a vent flue in said container, the top, bottom and opposite side walls of the carton being provided with ventilating openings communicating with the flue, and one of the flue walls being cut away to provide an opening for the circulation of air.

12. A package comprising a container having side wall members and top and bottom members, a vent flue in said carton extending from one of said members to another, certain of said members having ventilating openings of substantial area communicating with said flue, one of the flue walls being cut away to provide an opening for the circulation of air, and a vertical partition arranged in the container and intersecting said flue.

13. A package comprising a container having side wall members and top and bottom members, a vent flue in said container extending from one of said members to another of the members, the flue having opposite side walls, certain of said members having ventilating openings communicating with said flue, and tongues projecting from certain of said members between the side walls of the flue for holding those walls in spaced relation.

14. A package comprising a container having side wall members and top and bottom members, a vent flue in said container extending from one of said members to another, certain of said members having ventilating openings communicating with said flue, one of the flue walls being cut away to provide an opening for the circulation of air, and a vertical partition intersecting the flue and having a notched interlock with walls of the flue.

15. A package comprising a container having side wall members and top and bottom members, a vent flue in said container extending from one of said members to another, certain of said members having ventilating openings communicating with said flue, one of the flue walls being cut away to provide an opening for the circulation of air, and a vertical partition intersecting the flue and cut away to provide a ventilating opening communicating with the flue.

16. A package comprising a container having side wall members and top and bottom members, a vent flue in said container extending from one of said members to another and dividing the interior of the container into a plurality of chambers, certain of said members having ventilating openings communicating with said flue, one of the flue walls being cut away to provide an opening for the circulation of air, and secondary containers arranged within said chambers.

17. A package comprising a container having side wall members and top and bottom members, a vent flue in said container extending from one of said members to another and including opposite side walls, certain of said members having ventilating openings communicating with the flue, one of the flue walls being cut away to provide an opening for the circulation of air, and means integral with certain of said members for holding the walls of the flue in spaced relation.

18. A package comprising a container having side wall members and top and bottom members, a vent flue in said container extending from one of said members to another, certain of said members having ventilating openings of substantial area communicating with said flue, one of the flue walls being cut away to provide an opening for the circulation of air, the entire package being formed of manufactured fibrous sheet material.

GEORGE K. S. FERGUSON.